



93044

HOSPITAL AND MEDICAL FACILITIES SERIES  
(Under the Hill-Burton Program)

REGULATIONS

# General Standards of Construction and Equipment

Nurses' Residence

School of Nursing

Public Health Center

State Public Health Laboratory

Diagnostic or Treatment Center

Public Health Service Regulations - Part 53

Pertaining to the Hospital Survey and Construction (Hill-Burton) Act, as Amended



U. S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE  
Public Health Service

Entry 15691

# GENERAL STANDARDS OF CONSTRUCTION AND EQUIPMENT

NURSES' RESIDENCE  
SCHOOL OF NURSING  
PUBLIC HEALTH CENTER  
STATE PUBLIC HEALTH LABORATORY  
DIAGNOSTIC OR TREATMENT CENTER

Public Health Service  
Regulations-Part 53  
(Appendix A)

Pertaining to the Hospital  
Survey and Construction Act,  
as Amended

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE  
Public Health Service  
Division of Hospital and Medical Facilities  
Washington 25, D.C.

This material supersedes an unnumbered publication  
printed September 1960 under the same title.

PUBLIC HEALTH SERVICE PUBLICATION NO. 930-A-4

1962

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For sale by the Superintendent of Documents, U. S. Government Printing Office,  
Washington 25, D. C. Price 35 cents.

## FOREWORD

This publication presents all the requirements pertaining to Nurses' Residence, School of Nursing, Public Health Centers, State Public Health Laboratories, and Diagnostic or Treatment Centers which are included in the General Standards of Construction and Equipment, Subpart M (Appendix A) of the "Public Health Service Regulations, Part 53, Pertaining to the Hospital Survey and Construction Act, as Amended."

The format has been changed, a table of contents has been added, and only requirements for Nurses' Residence, School of Nursing, Public Health Centers, State Public Health Laboratories, and Diagnostic or Treatment Centers have been included; otherwise, the contents are as originally published in the Federal Register.



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## GENERAL STANDARDS OF CONSTRUCTION AND EQUIPMENT --

NURSES' RESIDENCE  
SCHOOL OF NURSING  
PUBLIC HEALTH CENTERS  
STATE PUBLIC HEALTH LABORATORIES  
DIAGNOSTIC OR TREATMENT CENTERS

### INTRODUCTION

- A. The standards set forth in this document have been established by the Surgeon General of the U. S. Public Health Service as required by Title VI of the Public Health Service Act. These standards constitute minimum requirements for construction and equipment and shall apply to all projects for which Federal assistance is requested under the act. They are considered necessary to insure properly planned and well-constructed facilities which can be maintained and efficiently operated to furnish adequate services.
- B. Since these are minimum requirements it is desirable only that they form a basis for development of higher standards. In the interest of promoting the development of higher standards it is the intention of the Public Health Service to make suggestions and disseminate the latest information as to current good practice in planning and design of health facilities. This information will be distributed from time to time to State agencies and other interested persons.
- C. No attempt has been made in establishing these standards to comply with all the various State and local codes and regulations which, of course, must be observed. The standards set forth in this document must be followed where they exceed any State and local codes and regulations. Likewise, compliance is required with minimum standards of construction and equipment promulgated by the State agency where such requirements provide a higher standard than the standards set forth in this document.

SITE SURVEY AND SOIL INVESTIGATION

- A. The applicant shall provide for a survey and soil investigation of the site and furnish a plat of the site. The purpose of this survey and soil investigation is to obtain all information necessary for the design of the building foundations and mechanical service connections and development of the site. It is suggested that this matter be deferred until the architect has been selected in order that he may co-operate with the engineer who obtains the data.
- B. If any existing structures or improvements on the site are to be removed by the owners or others, the buildings or improvements must be so designated on the plat.
- C. Any discrepancies between the survey and the recorded legal description shall be reconciled or explained.
- D. The plat shall indicate:
  - (1) The courses and distances of property lines.
  - (2) Dimensions and location of any buildings, structures, easements, rights-of-way or encroachments on the site.
  - (3) Details of party walls, or walls and foundations adjacent to the lot lines.
  - (4) The position, dimensions and elevations of all cellars, excavations, wells, back-filled areas, etc., and the elevation of any water therein.
  - (5) All trees which may be affected by the building operations.
  - (6) Detailed information relative to established curb and building lines and street, alley, sidewalk and curb grades at or adjacent to the site and the materials of which they are constructed.

- (7) All utility services and the size, characteristics, etc., of these services.
  - (8) The location of all piping, mains, sewers, poles, wires, hydrants, manholes, etc., upon, over or under the site or adjacent to the site if within the limits of the survey.
  - (9) Complete information as to the disposal of sanitary, storm water and subsoil drainage and suitability of subsoil for rainwater or sanitary disposal purposes if dry wells are used.
  - (10) Official datum upon which elevations are based and a bench mark established on or adjacent to the site.
  - (11) Elevations on a grid system of not more than 20-foot intervals to indicate changes of slope, etc., over that portion of the site to be developed.
  - (12) Elevations of contours, bottoms of excavations, etc.
  - (13) Contemplated date and description of any proposed improvements to approaches or utilities adjacent to the site.
- E. The plat shall bear a certification by the city engineer or other qualified official, that the true street lines and the officially established grades of curbs, sidewalks and sewers are correctly given.
- F. Adequate investigation shall be made to determine the subsoil conditions. The investigations shall include a sufficient number of test pits or test borings as will determine, in the judgment of the architect, the true conditions.
- G. Samples of strata of soil or rock taken in each pit or boring shall be retained in suitable containers. Each sample container shall be identified as to the boring and elevations at which taken and the labels initialed by the engineer making the soil investigation.

- H. The following information shall be noted on the plat:
- (1) Thickness, consistency, character, and estimated safe bearing value of the various strata encountered in each pit or boring.
  - (2) Amount and elevation of ground water encountered in each pit or boring, its probable variation with the seasons and effect on the subsoil.
  - (3) The elevation of rock, if known and the probability of encountering quicksand.
  - (4) Average depth of frost effect below surface of ground.
  - (5) High and low water levels of nearby bodies of water affecting the ground water level.
  - (6) The probability of freshets overrunning the site.
  - (7) Whether the soil contains alkali in sufficient quantities to affect concrete foundations.
  - (8) The elevation and location of the top of workings relative to the site, if the site is underlaid with mines, or old workings are located in the vicinity.
  - (9) Whether the site is subject to mineral rights which have not been developed.

SITE

- A. The site should be reasonably accessible to the center of community activities. Public transportation should be available within a reasonable distance, especially if an outpatient service is to be maintained.

- 
- B. The site should not be near insect breeding areas, noise or other nuisance producing industrial developments; airports, railways or highways producing noise or air pollution, or near penal or other objectionable institutions or near a cemetery.
  - C. Adequate roads and walks shall be provided within the lot lines to the main entrance, ambulance entrance and community activities.

### NURSES' RESIDENCE

#### A. Rooms

One nurse per room;<sup>1</sup>  
100 square feet in single rooms.  
150 square feet in double rooms.  
Lavatory in each room.<sup>1</sup>  
Closet or wardrobe for each nurse.  
No nurses' rooms shall be located on any floor  
which is below grade.

#### B. Common floor facilities:

Lounge with kitchenette to serve 30 to 60 nurses.  
Laundry room with two trays and two ironing boards  
to serve each 60 nurses.<sup>1</sup> If not provided on each  
floor, a centrally located laundry room containing  
the same proportion of trays and ironing boards  
shall be provided.  
Bathroom: One shower or tub for each six beds.  
Toilet room: With lavatories in bedrooms-- one  
water closet for each six beds and one lavatory  
for each three water closets. Without lavatories  
in bedrooms--one water closet for each six beds  
and one lavatory for each five beds.  
Linen closet.  
Janitors' closet.  
Telephone facilities.<sup>1</sup>

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<sup>1</sup>Desirable but not mandatory.

General Facilities  
School of Nursing  
Teaching Facilities  
Offices  
General

---

C. General Facilities

Lobby.  
Office.  
Main lounge (with alcoves<sup>1</sup>).  
Men's toilet (off lobby).  
Storage room for trunks.  
Laundry distribution room.<sup>1</sup>  
Employees' toilet room.<sup>1</sup>  
Boiler room (if facilities are not available elsewhere).

SCHOOL OF NURSING

A. Teaching Facilities

One science laboratory room.  
One dietetics laboratory room.  
One nursing arts laboratory with adequate facilities.  
One classroom to accommodate approximately twice  
the number of students as the nursing arts labo-  
ratory.  
One lecture room to accommodate total student body.  
One library.

B. Offices: Offices for instructors.

C. General

Storage room convenient to class rooms.  
Toilet room.  
Janitors' closet.

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<sup>1</sup>Desirable but not mandatory.

PUBLIC HEALTH CENTER

A. Administration

- (1) Where health department administration personnel has no offices in health center:

Waiting room.  
Public toilets.  
Office for public health nurses.  
Staff toilets.  
Assembly space: Waiting room may be used for this purpose where health centers serve under 30,000 population.

- (2) Where health department administration offices are provided in health centers add:

Health officer's office.  
Office for sanitary engineers.  
Health education office.  
Staff room and library: In health center for over 30,000 population.

B. Clinical: The clinical services, and extent of such services, provided in the health center will depend on the program contemplated by the health department to take care adequately of the particular needs of the population served by the health center.

- (1) For population up to 30,000:

Two examination rooms for maternal and child health, VD and TB clinics.  
Consultation room.  
Utility room.  
Dental room.<sup>1</sup>

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<sup>1</sup>Desirable but not mandatory.

Clinical (cont)

Laboratory

- 
- (2) For population over 30,000, if the following services are provided, they shall include areas noted as follows:

Maternal and child health:

Demonstration room.  
Examining room.  
Toilet.

Tuberculosis and X-ray:

X-ray room with dressing booths.  
Darkroom.  
Consultation and viewing room.

Venereal disease:

Examination room.  
Treatment room.  
Consultation room.  
Toilet.

Dental:

Dental facilities (two chairs desirable).  
Small dental laboratory.

Pharmacy: Dispensing room.

- C. Laboratory: The volume and type of laboratory tests in the health center will vary with local conditions and will determine the size of the laboratory. Such factors as density of population, area to be served, type of center (municipal, county, or rural), its use as a branch of the State laboratory and availability of other laboratory facilities must be considered.

- (1) One room is required for urinalysis, hematology, and dark field examinations for syphilis and storage of biologicals furnished by the State Health Department.

- 
- (2) Where food control, sanitation and communicable disease work is contemplated, another room shall be furnished for this purpose.

D. Service

- (1) General storage areas:

Bulk office and janitors' supplies.  
Bulk clinical supplies.  
Educational material.

- (2) Storage closets:

Office supplies.  
Medical supplies.  
Educational material.

- (3) Janitors' closet: Centrally located.

- (4) Heating plant.

STATE PUBLIC HEALTH LABORATORY

A. Administration Department

Director's office.  
Secretary's office.  
Assistant Director's office.  
Information desk and switchboard.  
Clerical office.  
Office supply room.  
Library.  
Staff meeting room.  
Records and filing room.  
Mailing and receiving room for incoming specimens,  
distribution of containers and of biologicals.  
Specimen and emergency treatment room.

Bacteriology, Syphilis Serology, Chemistry  
Department  
Research and Investigation  
Biologicals Department  
Central Services

B. Bacteriology Department

Office.  
Water, food and milk laboratory.  
Enteric disease and agglutination laboratory.  
Tuberculosis laboratory.  
Diagnostic laboratory.  
Incubator room.  
Sterile room.  
Rabies room.  
Adequate refrigeration.

C. Syphilis Serology Department

Office.  
Laboratory: Section of room separated by partitions  
for centrifuges and preparation of specimens.

D. Chemistry Department

Office.  
Laboratory: Facilities for water, food, drug,  
toxicology, and/or industrial hygiene analyses.  
Instrument room: Facilities for darkening.

E. Research and Investigation

Laboratory: Complete laboratory facilities within  
unit.

F. Biologicals Department

Adequate refrigeration.  
Deep freeze unit.  
Room temperature storage.

G. Central Services

Culture media and reagent preparation room.  
Glassware cleaning room.  
Acid cleaning unit.  
Sterilizing room for culture media and clean glass-  
ware only.

- 
- Supply room for storage and issue of sterile supplies, general supplies, chemicals, and glassware. Adjacent to sterilizing and glassware cleaning room.
- Bulk storage room.
- Janitor service room.
- Maintenance and utilities unit: Provisions for metal and woodwork, and glassblowing.
- Incinerator (animal).

Animal quarters:

- Animal rooms.
- Room for cleaning and sterilizing cages.
- Preparation room for food and bedding.
- Operating and animal inoculation room.

H. Facilities for Personnel

- Men's locker room with washroom and shower.
- Women's locker room with washroom and shower.
- Rest room.
- Lunch room.
- Staff toilets.

I. Additional Facilities: If the following activities are included, minimum requirements will be as follows:

(1) Consultation and evaluation service to local laboratories:

- Office.
- Laboratory.

(2) Manufacture of biologicals: This department, including Blood and Blood Products, shall be adequately isolated from the other laboratories. In the case of smallpox and tetanus vaccine preparation separation may be satisfactory in the same building if a separate entrance is provided and no interior connection exists to this department. A separate mechanical ventilating system must be provided.

Office.  
Laboratory; Cubicles for isolation work.  
Culture media room.  
Sterile room.  
Sterilizing room.  
Glasswashing room.  
Adequate refrigeration.  
Deep freeze unit.  
Storage room, controlled temperature.  
Packaging room.

(3) Blood and blood products:

Laboratory: Space and equipment for processing.  
Sterile room.  
Office (may be shared with biologicals department).  
Adequate refrigeration (may be shared with biologicals department).  
Storage room (may be shared with biologicals department).

(4) Pathology department: Laboratory.

(5) Clinical laboratory department: Laboratory.

(6) Virology department: This department shall be efficiently isolated from other laboratories including a separate mechanical ventilating system.

Office.  
Laboratory: Cubicles for isolation work.  
Sterile room.  
Sterilizing room.  
Inoculation and operating room.

Animal quarters:

Facilities for storage of food and bedding.  
Cleaning and sterilizing of cages.

Locker room with washroom and shower.

DIAGNOSTIC OR TREATMENT CENTER

A. General

- (1) The extent of the diagnostic, treatment, and ancillary facilities will be determined by the services contemplated and the estimated patient load.
- (2) Where the facility is to be an integral part of a hospital, the requirements of adjunct diagnostic and treatment facilities and outpatient department of the general hospital, (see paragraph B, Page 6 of General Hospitals) shall apply.
- (3) Where a diagnostic or treatment center is not to be an integral part of a hospital, then the facilities listed below must be provided unless available for convenient use in an associated health facility.
- (4) The planning of diagnostic or treatment center should provide for the privacy of the patient during interview, examination, and treatment.

B. Administration Facilities

Administrative, business, and receptionist space.  
Medical records space.  
Waiting space.  
Public telephone.

C. Diagnostic Facilities: In certain types of specialized projects, such as mental health clinics, the need for radiological and laboratory facilities will be determined by the services contemplated.

Radiographic room with adjoining darkroom.  
Utility and sterilizing facilities.  
Laboratory.

Diagnostic and Treatment Facilities

Service Facilities

Requirements for Details

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- D. Diagnostic and Treatment Facilities: If medical examination and/or treatment are to be included, the following shall be added

Consultation, examination and treatment space is required by the services contemplated.

E. Service Facilities

Storage.

Janitor's closet.

Employees' locker facilities.

Toilet facilities.

Boiler room.

Incinerator.

Accessible parking space.<sup>1</sup>

REQUIREMENTS FOR DETAILS

(1) Corridor widths:

Public Health Centers and Diagnostic and Treatment Centers: Not less than 5 feet. Greater width preferred.

School of Nursing: 6 feet, (as required by national codes).

State Public Health Laboratory and Nurses' Residence: As required by Building Exits Code. A greater width should be provided at elevator entrances.

(2) Door swings: No doors shall swing into the corridor except closet doors.

(3) Stair widths: The width of stairways shall be not less than 3 feet 8 inches. The width shall be measured between handrails where handrails project more than 3-1/2 inches.

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<sup>1</sup>Desirable but not mandatory.

(4) Fire safety:

Exit facilities: All exit facilities shall follow the recommendations of the Building Exits Code of the National Fire Protection Association.

In State public health laboratories each chemical laboratory room shall have a minimum of two exits.

Fire protection facilities: Other fire protection requirements such as standpipes, sprinklers, chemical fire extinguishers and fire alarm systems shall conform to the requirements of any one of the codes listed in Structural Requirements A, page 20.

Fire-resistive construction: See Structural Requirements C, page 21, for fire-resistive requirements affecting the structural members and connections.

- (5) Ray protection: X-ray rooms, surgeries, cystoscopic rooms and other areas containing X-ray producing equipment, other than mobile equipment, shall have ray protection as recommended in applicable handbooks of the National Bureau of Standards.
- (6) Radioisotopes: Rooms or areas where radioisotopes are used or stored, including teletherapy apparatus utilizing Radium, Cobalt-60, or Cesium-137 or other radioisotopes, shall have the ray protection necessary to limit the radiation in occupied areas to those levels required by the Atomic Energy Commission. The methods for determining radiation barriers shall be those established in the applicable handbooks of the National Bureau of Standards.
- (7) X-ray equipment: X-ray equipment and installation shall comply with the recommendations contained in the National Electrical Code and applicable handbooks of the National Bureau of Standards.

Finishes

General

Floors

(8) Ceiling heights:

Boiler room: Not less than 12 feet except that a lesser height may be used for these small buildings which may use a domestic type packaged heating unit. When a boiler is set in a depressed pit area, the height shall be measured from the pit floor.

All other rooms except those containing special equipment which may require a greater height, (X-ray, etc): Not less than 8 feet except that ceiling heights for corridors, storage rooms, patient's room toilets and other minor auxiliary rooms may be lower.

(9) Insulation in ceilings: Ceilings of boiler rooms shall be insulated where the floor directly above them is to be occupied.

(10) Parking space: Adequate parking space should be available for all health facilities.

(11) Window screens: All windows in State public health laboratories must be screened.

(12) Windows of examination and treatment rooms: Shall be glazed with obscure glass to insure privacy.<sup>1</sup>

FINISHES

General

A. Floors

(1) The floors of the following areas shall have smooth, waterproof surfaces which are wear resistant:

- Toilets.
- Baths.
- Utility rooms.
- Treatment rooms.
- Sterilizing rooms.
- Janitors' closets.

<sup>1</sup>Desirable but not mandatory.

- 
- (2) The floors of the following areas shall be smooth and easily cleaned:

Pharmacies.  
Laboratories.

- (3) The floors of the following areas shall be waterproof, greaseproof, smooth and resistant to heavy wear:

Kitchens.  
Food preparation.

B. Walls

- (1) The walls of the following areas shall have a smooth surface with painted or equal washable finish in light color. At the base, they shall be waterproof and free from spaces which may harbor ants and roaches:

All rooms where food and drink are prepared,  
served or stored.

- (2) The walls of the following areas shall have waterproof painted, glazed or similar finishes to a point above the splash or spray line:

Kitchens.  
Utility rooms.  
Baths.  
Showers.  
Dishwashing rooms.  
Janitors' closets.  
Sterilizing rooms.  
Spaces with sinks.

C. Ceilings

- (1) The ceilings of the following areas shall be painted with waterproof paint:

All kitchens and other rooms where food and drink are prepared.

Ceilings (cost)  
State public health laboratory  
Floors

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- (2) The ceilings of the following areas shall be acoustically treated:

Utility rooms.<sup>1</sup>  
Kitchens.<sup>1</sup>

State public health laboratory

A. Floors

- (1) Resilient, smooth and stain resistant:

All laboratories other than chemistry laboratories.

- (2) Resilient, smooth and acid resistant:

Chemistry laboratories.

- (3) Smooth waterproof, grease-proof, easily cleaned, non-slip, resistant to heavy traffic:

Culture media rooms.  
Glasswashing rooms.  
Sterilization rooms.  
Acid cleaning rooms.  
Animal rooms.

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<sup>1</sup>Desirable but not mandatory.

B. Walls

- (1) Waterproof, painted, glazed or similar finishes to a point above the splash or spray line. They shall be without cracks, and in conjunction with floors shall be waterproof and free of cracks and spaces which may harbor ants and roaches:

Laboratories.  
Incubator rooms.  
Sterilizing rooms.  
Culture media rooms.  
Glasswashing rooms.  
Acid cleaning rooms.  
Inoculation and operating rooms.  
Animal rooms.

- (2) Same as above, but finish to reach to ceiling: Sterile rooms.

C. Ceilings

- (1) Waterproof painted: Sterile rooms.

- D. Shelves and Cabinets: Shelves and cabinets which are used for the storage of food, dishes, and cooking utensils shall be so constructed and mounted that there shall be no openings or spaces which cannot be cleaned and which might harbor vermin or insects. Cabinets which are used for the storage of open food containers and dishes shall be dust tight.

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## STRUCTURAL REQUIREMENTS

A. Codes: In addition to compliance with the standards set forth in this document, all applicable local and State building codes and regulations must be observed. In areas which are not subject to local or State building codes, the recommendations of any one of the following national codes shall apply insofar as such recommendations are not in conflict with the standards set forth herein.

- (1) National Building Code: National Board of Fire Underwriters, 85 John Street, New York 38, New York.
- (2) Basic Building Code: Building Officials Conference of America, 1525 E. 53rd Street, Chicago 15, Illinois.
- (3) Southern Building Code: Southern Building Code Congress, Brown-Marx Building, Birmingham, Alabama.
- (4) Uniform Building Code: International Conference of Building Officials, 610 South Broadway, Los Angeles 14, California.

B. Design Data

- (1) General: The buildings and all parts thereof shall be of sufficient strength to support all dead, live and lateral loads without exceeding the working stresses permitted for the materials of their construction in the applicable code.
- (2) Special: Special provisions shall be made for machine or apparatus loads which would cause a greater stress than that produced by the specified minimum live load, with due consideration of vibration or impact resulting from operation of such equipment (e.g., some portable X-ray machines weigh as much as 1,000 pounds). Consideration shall be given to structural members and connections of structures which may be subject to hurricanes, tornadoes and earthquakes. Suitable allowance shall be made for future partition changes.

- (3) Live loads: The following unit live loads shall be taken as the minimum uniformly distributed live loads for the occupancies listed:

Bedrooms and all adjoining service rooms (except solaria and corridors) -- 40 psf.

Solaria, corridors in dormitory units and all corridors above the first floor, examination and treatment rooms, laboratories, toilets and locker rooms -- 60 psf.

Corridors on first floor, waiting rooms and similar public areas, offices, conference room, library, and radiographic room -- 80 psf.

Stairways, large rooms used for dining, recreation or assembly purposes, work shops -- 100 psf.

Records file room, storage, supply -- 125 psf.

Mechanical equipment room (unless actual equipment loads are accurately determined) -- 150 psf.

Roofs (except use increased value where snow and ice may occur) -- 20 psf.

Wind--as required by local conditions, but not less than -- 15 psf.

#### C. Construction Including Fire-Resistive Requirements

- (1) Foundations shall rest on natural solid ground and shall be carried to a depth of not less than one foot below the estimated frost line or shall rest on leveled rock or load-bearing piles when solid ground is not encountered. Footings, piers, and foundation walls shall be adequately protected against deterioration from the action of ground water. Proper bearing values for the soil shall be established in accordance with recognized standards.

**Construction including Fire-Resistive  
Requirements (cont)**

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- (2) One-story buildings shall be constructed of not less than one-hour fire resistive construction throughout except as follows:

Boiler rooms and rooms used for the storage of combustible materials shall be of two-hour fire-resistive noncombustible construction.

Interior nonload bearing partitions, other than those enclosing corridors and vertical shafts, may be of noncombustible construction without a fire-resistive rating.

- (3) Structures built of other than noncombustible materials shall adhere to the floor area restrictions set forth in any one of the national codes listed in paragraph A of this section. For purposes of evacuation, the window sills of one-story buildings constructed of other than noncombustible materials shall be not more than six feet above the adjacent ground level.
- (4) Buildings more than one story in height shall be constructed of noncombustible materials, using a structural framework of reinforced concrete or structural steel except that load-bearing masonry walls and piers may be utilized for buildings up to and including three stories in height. The fire-resistive requirements of the various building elements shall follow the requirements of any one of the four national codes listed in paragraph A of this section except for the modifications listed below:

Corridor partitions shall be of one-hour fire-resistive construction.

Walls, enclosing stairways, elevators, laundry and trash chutes, and other vertical shafts, boiler rooms and rooms used for storage of combustible materials shall be of two-hour fire-resistive construction.

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- (5) Interior finish of all exit ways, storage rooms and all areas of unusual fire hazard shall have a flame spread rating of less than 20.
  - (6) Interior finish of patient rooms, patient day rooms and other areas occupied by patients shall have a flame spread rating of less than 75.
  - (7) Interior finish of other areas shall have a flame spread rating of less than 75, except that ten per cent of the aggregate wall and ceiling areas of any space may have a flame spread rating up to 200.
  - (8) Interior finish materials shall be classified in accordance with their average flame spread rating on the basis of tests conducted in accordance with ASTM Standard No. E 84.

## MECHANICAL REQUIREMENTS

### A. Heating: Steam Systems and Ventilation

- (1) Codes: The heating system, steam system boilers, ventilation system and air conditioning system shall be furnished and installed to meet all requirements of the local and State codes and regulations, and the regulations of the National Board of Fire Underwriters and the minimum general standards as set forth in this section. Where there is no local or State boiler code, the recommendations of the ASME shall apply. Gas-fired equipment shall comply with the regulations of the American Gas Association.
- (2) Boilers: Boilers shall have the necessary capacity when operating at normal rating to supply the heating system hot water, and steam equipment, such as sterilizers. Boilers which supply high pressure steam to sterilizers shall meet the requirements of the city and State boiler codes for 125 pounds working pressure.

- (3) Heating system: The building shall be heated by a hot water, steam, or equal type heating system.
- (4) Steam system: A system of steam and return mains and appurtenances shall be provided to supply all equipment which requires steam heat.
- (5) Boiler accessories: Boiler feed pumps, return pumps and circulating pumps shall be furnished in duplicate, each of which has a capacity to carry the full load. Blow off valves, relief valves, non-return valves, injectors and fittings shall be provided to meet the requirements of the city and State codes. Where no city or State codes are in force the recommendations of the ASME shall apply.
- (6) Temperatures: It shall be possible to maintain a temperature of 70 degrees F. in each room and occupied space. In spaces where radiant heat is used, the minimum temperatures specified may be reduced to maintain an equivalent comfort level. Radiators and convectors, if used, shall be provided with hand control valve except where individual room automatic control is provided.
- (7) Piping: Steam and hot water piping may be copper pipe and fittings, standard weight steel or iron pipe and cast iron fittings. Pipe used in heating and steam systems shall not be smaller sizes than prescribed by the latest edition of the ASHRAE Guide. The ends of all steam mains and low points in steam mains shall be dripped.
- (8) Valves: Steam, return and heating risers, as well as steam, return and heating mains shall be controlled separately by a valve. Each steam and return main shall be valved. Each piece of equipment supplied with steam shall be valved on the supply and return ends.

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- (9) Thermostatic control: The heating system shall be thermostatically controlled in one or more zones.
  - (10) Coverings: Boilers and smoke breeching shall be insulated with covering not less than 1-inch magnesia blocks and 1/2-inch plastic asbestos finish. All high pressure steam and high pressure return piping shall be insulated with covering not less than the equivalent of 1-inch four-ply asbestos covering. Heating mains in the boiler room, in unheated space, unexcavated spaces, and where concealed, shall be insulated with covering not less than 1-inch asbestos air cell.
  - (11) Ventilation: Rooms which do not have outside windows and which are used by patients or hospital personnel, such as utility rooms, toilets, baths, sterilizer rooms, sterilizer equipment chambers and food storage rooms shall be provided with forced or suitable ventilation to change the air at least once every six minutes.

Rooms used for the storage of combustible anesthetic agents, paints and other highly flammable materials shall be ventilated to the outside air with intake and discharge ducts. Oxygen storage and oxygen manifold rooms shall comply with the regulations set forth in the latest edition of the NFPA-56.

Separate special ventilation or air conditioning systems are required for the bacteriological and virus laboratories.

- (12) Incinerators: Incinerators are recommended in health centers, nurses' residences, laboratories, and nursing homes.

Incinerators are required for diagnostic or treatment facilities and shall be of such design, construction and capacity to fulfill the needs of such facilities.

- (13) Tests: The systems shall be tested to demonstrate to the satisfaction of the State agencies having jurisdiction that: The boilers will carry the full load and that the steam supply to all steam heated equipment is ample, that the ventilating equipment meets the minimum requirements and that all systems circulate satisfactorily without leaks or noise.
- B. Plumbing and Drainage: All parts of the plumbing systems shall comply with all applicable local and State codes and the requirements of the State Department of Health and the minimum general standards as set forth in this paragraph. Where no State or local codes are in force or where such codes do not cover special hospital equipment, appliances, and water piping, the National Plumbing Code ASA-A40.8-1955 shall apply.
- (1) Water service: The water supply available shall be tested and approved by the State Department of Health.  
The water service shall be brought into the building to comply with the requirements of the local water department and shall be free of cross connections.
- (2) Hot water heaters and tanks: Hot water storage tanks shall be of noncorrosive metal or be lined with non-corrosive material to comply with the ASME Code for pressure vessels. Tanks and heaters shall be fitted with vacuum and relief valves, and where the water is heated by coal or gas they shall have thermostatic relief valves. Heaters shall be thermostatically controlled.
- (3) Water supply systems: From the cold water service and hot water tanks, cold water and hot water mains and branches shall be run to supply all plumbing fixtures and equipment which require hot or cold water or both for their operation. Pipes shall be sized to supply water to all fixtures with a minimum pressure of 15 pounds at the top floor fixtures during maximum demand periods. All plumbing fixtures except water closets, urinals, and

drinking fountains shall have both hot and cold water supplies. Every supply outlet or connection to a fixture or appliance shall be protected against backflow in accordance with the provisions of standards for air gaps and backflow preventers as provided by National Plumbing Code ASA-A40.8-1955. Wherever the usage of fixture or appliance will permit, water supplied to all fixtures, open tanks and equipment, shall be introduced through a suitable air gap between the water supply and the flood level of the fixture. No connections shall be made which will permit backflow.

Hot water circulating mains and risers shall be run from the hot water storage tank to a point directly below the highest fixture at the end of each branch main. Where the building is higher than three stories, each riser shall be circulated. Water pipe sizes shall be equal to those prescribed by the National Plumbing Code ASA-A40.8-1955.

- (4) Drainage system: All fixtures and equipment shall be connected through traps to soil and waste piping and to the sewer. Indirect waste connections shall be provided for devices or fixtures in which food, drink, water and ice are processed or stored, dishwashing machines, sterilizers, stills and equipment requiring cooling water. All shall conform to the requirements of the National Plumbing Code ASA-A40.8-1955.
- (5) Rain water drains: Leaders shall be provided to drain the water from roof areas to a point from which it cannot flow into the basement or areas around the building. Courts, yards, and drives which do not have natural drainage from the building shall have catch basins and drains to low ground, storm water system, or dry wells. Where dry wells are used they shall be located at least 20 feet from the building.

- (6) Gas piping: Gas appliances shall be approved by the American Gas Association and shall be connected in accordance with the requirements of the company furnishing the gas. Gas outlets shall not be provided in patients' bedrooms.
- (7) Oxygen systems: Where oxygen systems are installed the oxygen piping, outlets, manifolds, manifold rooms and storage rooms shall be installed in accordance with the requirements of NFPA Bulletins No. 56 and No. 565.
- (8) Pipe: The building drain, to a point 5 feet from the building, shall be of cast iron. Soil stacks, drains, vents, waste lines, and leaders shall be of copper, cast iron or steel except drain lines in back-fill or soil shall be of cast iron. Oxygen lines shall be of copper tubing not lighter than type "K" or IPS red brass with fittings of brass or copper. Drains from sinks which use chemicals shall be of approved acid resistant material. Gas piping shall be of black iron with malleable fittings or copper tubing.
- (9) Valves: Each main, branch main, riser and branch to a group of fixtures of the water systems shall be valved.
- (10) Insulation: Tanks and heaters shall be insulated with covering equal to 1 inch four-ply air cell.

Hot water and circulating pipes shall be insulated with covering equal to canvas jacketed three-ply asbestos air cell.

Cold water mains in occupied spaces and in store rooms shall be insulated with canvas-jacketed felt covering to prevent condensation. All pipes in outside walls shall also be insulated to prevent freezing.

- (11) Stand pipe system: The stand pipe system shall be installed as required by the local and State departments having jurisdiction. Where no local or State codes are in force, the stand pipe system shall comply with the requirements of the National Board of Fire Underwriters.
- (12) Sprinkler system: To reduce the danger from fire, it is desirable to provide automatic sprinkler systems in those areas which are considered hazardous from a fire safety point of view. Such hazardous areas may include the soiled linen rooms, basement corridors, paint shops, wood working shops, trash rooms, storage rooms, accessible attics, laundry and trash chutes, and entire nonfire-proofed buildings.
- (13) Plumbing fixtures: The material used for plumbing fixtures shall be of an approved nonabsorptive acid resisting material.

Water closets shall be of a quiet operating type.

Flush valves shall be designed for quiet operation with nonreturn stops, backflow preventers and silencers.

Faucet spouts shall have the discharge opening above the rim of the fixture. Gooseneck spouts shall be used for patients' lavatories, nurses' lavatories and sinks. Knee or elbow action controls shall be used for doctors' wash up, utility and clinic sinks and in treatment rooms. Wrist action spade handles shall be used on other lavatories and sinks used by doctors or nurses.

- (14) Drinking fountains: Drinking fountains shall comply with the ASA Z4.2-1942.

Refrigeration

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- (15) Tests: All soil, waste, vent and drain lines shall be tested by water or air test before they are built in.

A smoke or chemical test shall be applied after fixtures have been set. Water pipe shall be hydraulically tested to a pressure equal to twice the working pressure. The tests shall demonstrate to the satisfaction of the State agency that there are no leaks, that hot water is circulating satisfactorily, that all traps are properly vented, that there is ample supply of hot and cold water to all fixtures, that no fixture or equipment can be back-siphoned and that there are no backflow connections.

- (16) Sterilizers: Sterilizers and autoclaves shall be provided of the required types and necessary capacity to adequately sterilize instruments, utensils, dressings, water, gloves, sutures, etc., and as required for laboratories. The sterilizers shall be of recognized hospital types with approved controls and safety features.
- (17) Emergency showers: Emergency showers shall be provided in chemical laboratories in State public health laboratories.

C. Refrigeration

- (1) Codes: The refrigerators and refrigerating systems shall be furnished and installed to meet all requirements of the local and State codes and regulations, the National Board of Fire Underwriters, and the minimum general standards as set forth in this paragraph.

This section shall include requirements for portable refrigerators, built-in refrigerators, garbage refrigeration and ice-making and refrigerator equipment.

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- (2) Box construction: Boxes shall be insulated with water-proof, nonabsorbent, verminproof insulation. For the portable boxes, the insulation in the doors and walls shall be equal to 2-inch cork. Outer walls and doors of the walk-in boxes shall have insulation equal to 4-inch cork. Boxes shall be lined with nonabsorbent sanitary material which will withstand the heavy use to which it will be subjected and constructed so as to be easily cleaned.

Refrigerators of adequate capacity shall be provided in all kitchens and other preparation centers, where perishable foods will be stored.

- (3) Refrigerator machines: Toxic, "irritant," or inflammable refrigerants shall not be used in refrigerator machines.

The compressors and evaporators shall have sufficient capacity to maintain temperatures of 35 degrees F. Compressors shall be automatically controlled.

- (4) Tests: Compressors, piping, and evaporators shall be tested for leaks and capacity.

#### ELECTRICAL REQUIREMENTS

- (1) Codes and regulations: The installation of electrical work and equipment shall comply with all local and State codes and laws applicable to electrical installations and the minimum general standards as set forth in this paragraph. Where such codes and laws are not in effect or where they do not cover special installations the National Electrical Code and standards referenced therein which are applicable shall apply. The regulations of the local utility company shall govern service connections. All materials shall be new and shall equal standards established by the Underwriters Laboratories, Inc. Certificates of approval shall be issued by these departments having jurisdiction before the work will be approved for final payment.

- (2) Service: Connections from the service mains, with meter connections and service switches shall be installed as required by the Public Service Company.
- (3) Feeders and circuits: Separate power and light feeders shall be run from the service to a main switchboard and from there sub-feeders shall be provided to the motors and power and light distribution panels. Where there is only one service feeder, separate power and light feeders from the service entrance to the switchboard will not be required. From the power panels feeders shall be provided for large motors, and circuits from the light panels shall be run to the lighting outlets. Large heating elements shall be supplied by separate feeders from the power or light service as directed by the local Public Service Company. Independent feeders shall be furnished for X-ray equipment.
- (4) Switchboard and power panels: Circuit breakers or dead front type fused switches shall be installed to protect all feeders and subfeeders. Motors shall be connected with breakers or fused switches.
- (5) Light panels: Light panels shall be provided on each floor for the lighting circuits on that floor. Light panels shall be located near the load centers not more than 100 feet from the farthest outlet.
- (6) Lighting outlets and switches: All occupied areas shall be adequately lighted as required by duties performed in the space.
- (7) Receptacles (convenience outlets): Receptacles suitable for the service shall be located where plug-in service is required.
- (8) Emergency lighting: Emergency lighting will be required as provided for by local and State codes.

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- (9) Lighting fixtures: Lighting fixtures shall be furnished for all lighting outlets. They shall be of a type suitable for the space.
  - (10) Fire alarms: A manually-operated fire alarm system shall be installed in each facility. It is recommended that this system be coded and electrically supervised. The alarm system shall comply with applicable local codes, or in the absence of such codes the NFPA 101 "Building Exits Code" and NFPA 72 "Standard for Proprietary Protective Signalling Systems" shall apply.
  - (11) Clocks: A clock system is desirable but not mandatory. Where provided, it should be complete with master clock and time indicator clocks in administrative offices, main lobby, and work areas as required.
  - (12) Tests: Lighting fixtures, all wiring and equipment shall be tested to show that they are free from grounds, shorts, or open circuits, that motors rotate correctly and that all equipment operates as specified.

#### ELEVATOR AND DUMBWAITER REQUIREMENTS

- (1) Codes: The elevator installations shall comply with all local and State codes, American Standard Safety Code for Elevators, the National Board of Fire Underwriters, the National Electric Codes, and the minimum general standards as set forth in this paragraph.
- (2) Number of cars: Any facility with patients on one or more floors above the first floor shall have at least one electric motor driven elevator.  
  
Elevators with a rise of more than six stories require special consideration.
- (3) Cab: Cabs shall be constructed with fireproof material.

- (4) Controls: Elevators for which operators will not be employed, shall have automatic push-button control, signal control or dual control for use with or without operator. Where two push-button elevators are located together with one servicing more than three floors and basement; they shall have collective or signal control. Where the car has a speed of more than 100 feet per minute or has a rise of four or more floors, the elevator shall be equipped with automatic self-leveling control which will automatically bring the car platform level with the landing with no load or full load. Multivoltage or variable voltage machines shall be used where speeds are greater than 150 feet per minute. For speed above 350 feet per minute, the elevators shall be of the gearless type.
- (5) Dumbwaiters: Dumbwaiter cabs shall be not less than 24" x 24" x 36" of steel with one shelf to operate at speed of 50 feet to 100 feet per minute when carrying a load of 100 pounds. Dumbwaiters serving basement and four floors shall have a minimum speed of 100 feet per minute.
- (6) Tests: Elevator machines shall be tested for speed and load with and without loads in both directions and shall be given overspeed tests as covered by the "Safety Code for Elevators."

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REQUIREMENTS FOR PREPARATION OF PLANS,  
SPECIFICATIONS AND ESTIMATES

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A. General

- (1) The requirements contained in this section have been established for the guidance of the applicant and the architect to provide a standard method of preparation of drawings, specifications and estimates.
- (2) It is expected that the applicant will find it advantageous to submit the material through the State agency in three stages for its recommendation and approval. However, the applicant may, if he so elects, combine the first two stages.
- (3) If the data required under stage three is available, it may be submitted without the drawings required under stages one and two.
- (4) Copies of the final working drawings and specifications previously submitted under stage three will be submitted for approval with the formal application for the project. The requirements for the material submitted at each of the three stages are as follows:

B. Drawings and Specifications

(1) First Stage--Program and schematic plans

Program: List in outline form the rooms or spaces to be included in each department, explaining the functions or services to be provided in each, indicating the approximate size, the number of personnel and the kind of equipment or furniture it will contain. Note any special or unusual services or equipment to be included in the facility.

Schematic plans: Single line drawings of each floor showing the relationship of the various departments or services to each other and the room arrangement in each department. The name of each room should be noted. The proposed roads and walks, service and entrance courts, parking and orientation may be shown on either a small plot plan or the first floor plan. Simple verticle space diagram should be submitted at this stage.

Construction outline: A brief description of the type of construction.

Description of site: If a survey has been made, a plat shall be submitted at this time; if not, it should be submitted with the Preliminary Plans (second stage). In lieu of a plat of the survey, a description of the site may be submitted at this time. This shall note the general characteristics of the site, easement, availability of electricity, water and sewer lines, main roadway approaches, direction of prevailing breezes, orientation, etc. A map indicating location of the facility in its geographic area should be submitted.

Preliminary cost estimates.

(2) Second Stage--Preliminary plans, elevations, and outline specifications

- (a) Development of the preliminary sketch plans indicating in more detail the assignment of all spaces, size of areas and rooms, indicating in outline, the fixed and movable equipment and furniture.
- (b) The plans shall be drawn at a scale sufficiently large to clearly present the proposed design.
- (c) The total floor area shall be computed and shown on the drawings.

- (d) The drawings shall include a plan of each floor including the basement or ground floor, roof plan, approach plan showing roads, parking areas, sidewalks, etc., elevations of all facades, sections through the building. A print of the "Site Survey and Soil Information" (see pages 2 - 4) shall be included unless it has already been submitted in stage one.

Outline specifications shall provide a general description of the construction including interior finishes; acoustical material, its extent and types; extent of the conductive floor covering; heating and ventilating systems; and the type of elevators.

Revised cost estimates.

- (3) Third Stage--Working drawings and specifications: All working drawings shall be well prepared so that clear and distinct prints may be obtained, accurately dimensioned and include all necessary explanatory notes, schedules and legends. Working drawings shall be complete and adequate for contract purposes. Separate drawings shall be prepared for each of the following branches of work: architectural, structural, mechanical, electrical. They shall include the following:

(a) Architectural drawings

- (1) Approach plan showing all new topography, newly established levels and grades, existing structures on the site (if any), new buildings and structures, roadways, walks, and the extent of the areas to be seeded. All structures and improvements which are to be removed under the construction contract shall be shown. A print of the survey shall be included with the working drawings for the information of bidders only. The survey shall not be made a contract drawing.

- (2) Plan of each floor and roof.
  - (3) Elevations of each facade.
  - (4) Sections through building.
  - (5) Scale and full size details as necessary; scale details at one and one-half inches to the foot may be necessary to properly indicate portions of the work. Full size details may be prepared after award of construction contract.
  - (6) Schedule of finishes.
- (b) Equipment drawings: Large scale drawings of typical and special rooms indicating all fixed equipment and major items of furniture and movable equipment. The furniture and movable equipment will not be included in the construction contract but should be indicated by dotted lines.
- (c) Structural drawings
- (1) Plans of foundations, floors, roofs and all intermediate levels shall show a complete design with sizes, sections, and the relative location of the various members and schedule of beams, girders and columns.
  - (2) Floor levels, column centers, and offsets shall be dimensioned.
  - (3) Special openings and pipe sleeves shall be dimensioned or otherwise noted for easy reference.
  - (4) Details of all special connections, assemblies and expansion joints shall be given.

- (5) Notes on design data shall include the name of the governing building code, values of allowable unit stresses, assumed live loads, wind loads, earthquake load, and soil-bearing pressures.
- (6) For special structures, a stress sheet shall be incorporated in the drawings showing:
- Outline of the structure.
- All load assumptions used.
- Stresses and bending moments separately for each kind of loading.
- Maximum stress and/or bending moment for which each member is designed, when not readily apparent from preceding item.
- Horizontal and vertical reactions at column bases.
- (d) Mechanical drawings: These drawings with specifications shall show the complete heating, steam piping and ventilations systems; plumbing, drainage and stand pipe systems.
- (1) Heating, steam piping and ventilation:
- Radiators and steam heated equipment, such as sterilizers.
- Heating and steam mains and branches with pipe sizes.
- Diagram of heating and steam risers with pipe sizes.
- Sizes, types and heating surfaces of boilers, furnaces, with stokers and oil burners, if any.

Pumps, tanks, boiler breeching and piping and boiler room accessories.

Air-conditioning systems with refrigerators, water and refrigerant piping, and ducts.

Exhaust and supply ventilating systems with steam connections and piping.

(2) Plumbing, drainage and stand pipe systems:

Size and elevation of street sewer, house sewer, house drains, street water main and water service into the building.

Location and size of soil, waste, and vent stacks with connections to house drains, fixtures and equipment.

Size and location of hot, cold and circulating mains, branches and risers from the service entrance and tanks.

Riser diagram to show all plumbing stacks with vents, water risers and fixture connections.

Gas, oxygen and special connections.

Standpipe system.

Plumbing fixtures and fixtures which require water and drain connections.

(3) Elevator and dumbwaiters: Shaft details and dimensions, size car platform and doors; travel, pit and machine room.

- (4) Kitchens, laundry, refrigeration and laboratories shall be detailed at a satisfactory scale to show the location, size and connection of all fixed and movable equipment.
- (e) Electrical drawings: Drawings shall show all electrical wirings, outlets, and equipment which require electrical connections.
  - (1) Electrical service entrance with service switches, service feeders to the public service feeders and characteristics of the light and power current. Transformers and their connections, if located in the building, shall be shown.
  - (2) Plan and diagram showing main switchboard, power panels, light panels and equipment. Feeder and conduit sizes shall be shown with schedule of feeder breakers or switches.
  - (3) Light outlets, receptacles, switches, power outlets and circuits.
  - (4) Telephone layout showing service entrance, telephone switchboard, strip boxes, telephone outlets and branch conduits as approved by the Telephone Company. Where public telephones are used for inter-communication, provide separate room and conduits for racks and automatic switching equipment as required by the Telephone Company.
  - (5) Nurses' call systems with outlets for beds, duty stations, door signal lights, annunciators and wiring diagrams.
  - (6) Doctors' call and doctors' in-and-out systems with all equipment wiring, if provided.

Pumps, tanks, boiler breeching and piping and boiler room accessories.

Air-conditioning systems with refrigerators, water and refrigerant piping, and ducts.

Exhaust and supply ventilating systems with steam connections and piping.

(2) Plumbing, drainage and stand pipe systems:

Size and elevation of street sewer, house sewer, house drains, street water main and water service into the building.

Location and size of soil, waste, and vent stacks with connections to house drains, fixtures and equipment.

Size and location of hot, cold and circulating mains, branches and risers from the service entrance and tanks.

Riser diagram to show all plumbing stacks with vents, water risers and fixture connections.

Gas, oxygen and special connections.

Standpipe system.

Plumbing fixtures and fixtures which require water and drain connections.

(3) Elevator and dumbwaiters: Shaft details and dimensions, size car platform and doors; travel, pit and machine room.

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  - (e) Electrical drawings: Drawings shall show all electrical wirings, outlets, and equipment which require electrical connections.
    - (1) Electrical service entrance with service switches, service feeders to the public service feeders and characteristics of the light and power current. Transformers and their connections, if located in the building, shall be shown.
    - (2) Plan and diagram showing main switchboard, power panels, light panels and equipment. Feeder and conduit sizes shall be shown with schedule of feeder breakers or switches.
    - (3) Light outlets, receptacles, switches, power outlets and circuits.
    - (4) Telephone layout showing service entrance, telephone switchboard, strip boxes, telephone outlets and branch conduits as approved by the Telephone Company. Where public telephones are used for inter-communication, provide separate room and conduits for racks and automatic switching equipment as required by the Telephone Company.
    - (5) Nurses' call systems with outlets for beds, duty stations, door signal lights, annunciators and wiring diagrams.
    - (6) Doctors' call and doctors' in-and-out systems with all equipment wiring, if provided.

- (7) Fire alarm system with stations, gongs, control board and wiring diagrams.
  - (8) Emergency lighting system with outlets, transfer switch, source of supply, feeders and circuits.
- (f) Additions to existing projects: Procedures and requirements for working drawings and specifications to be followed and in addition the following information shall be submitted:
- Type of activities within the existing building.
- Type of construction of existing building and number of stories high.
- Plans and details showing attachment of new construction to the existing structure and mechanical systems.
- Specifications shall supplement the drawings and shall comply with the following:
- (1) The specifications shall fully describe, except where fully indicated and described on the drawings, the materials, workmanship, the kind, sizes, capacities, finishes and other characteristics of all materials, products, articles and devices.
  - (2) The specifications shall include:
    - Cover or title sheet.
    - Index.
    - Invitation for bids.
    - General conditions.
    - Wage schedule, section 2, Labor Standards and Kickback Regulations.

General requirements.

Sections describing material and workmanship in detail for each class of work.

Form of bid bond.

Bid form.

Form of agreement.

Performance and payment bond forms.

- (3) In order to obtain a standard procedure Standard Specification Forms will be furnished to the State agency as a guide to the architect.

Estimates shall show in convenient form and detail the probable total cost of the work to be performed under the contract for construction of new buildings, expansion, remodeling and alteration of existing buildings including provision of fixed equipment contemplated by plans and specifications.

#### EQUIPMENT REQUIREMENTS

- A. General: Equipment necessary for the functioning of the facility as planned shall be provided in the kind and to the extent required to perform the desired service. The necessary equipment shall be included in the cost of the project and is considered an essential part of the project.
- B. Definition of Equipment: The term "equipment" as used in this section means all items necessary for the functioning of all services of the facility, including such services as accounting and records, maintenance of buildings and grounds, laundry service, public waiting rooms, public health, and related services. The term "equipment" does not include items of current operating expense such as food, fuel, drugs, dressings, paper, printed forms, soap, and the like.

Classification of Equipment

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C. Classification of Equipment: All equipment shall be classified in three groups as indicated below, the basis of classification being the usual methods of purchasing the equipment and suggested accounting practices in regard to depreciation.

- (1) Group I: Built-in equipment usually included in construction contracts. Hospital cabinets and counters, laboratory and pharmacy cabinets, X-ray darkroom equipment, cubicle curtain equipment, shades and venetian blinds and any other built-in equipment, including items such as kitchen equipment, laundry chutes, elevators, dumbwaiters, boilers, incinerators, refrigerating equipment, sterilizing equipment, surgical lighting, dental units and chairs, and autopsy tables.
- (2) Group II: Depreciable equipment of five years' life or more normally purchased through other than construction contracts. Large items of furniture and equipment having a reasonably fixed location in the building but capable of being moved. Examples are bedroom and office furniture, anesthesia apparatus, operating and obstetrical tables, radiographic and fluoroscopic units, basal metabolism apparatus and oxygen tents, dental amalgamators and casting machines, centrifuges, microscopes and balances, and wheeled equipment.
- (3) Group III: Nondepreciable equipment of less than five years' life normally purchased through other than construction contract. Small items of low unit cost and suited to storeroom control. Examples are chinaware, silverware, kitchen utensils, wastebaskets, bedpans, dressing jars, catheters, surgical instruments, bed linens, and blankets.

D. Responsibility of Applicant:

- (1) It shall be the responsibility of the applicant to select and purchase all necessary equipment for the complete functioning of all services included in the project in accordance with these standards and any further standards prescribed by the State agency.
- (2) It is essential that the equipment shall be properly apportioned and budgeted to the various services of the facility so that unduly expensive or elaborate equipment is not provided for some services of the project necessitating the use of cheap and inadequate equipment for other services.
- (3) As soon as possible after the award of the construction contract, the applicant shall submit to the Surgeon General through the State agency for approval a complete list in triplicate of all proposed Groups II and III equipment, including itemized estimate of cost.



Related Publications from the Hospital and Medical Facilities  
Series under the Hill-Burton Program

Category A. Regulations

- - - Public Health Service Act - Title VI - Construction of Hospitals. Revised November 6, 1961.
- - - Public Health Service Regulations - Part 53 -- Pertaining to the Hospital and Medical Facilities Survey and Construction Legislation. PHS Publication No. 930-A-1; 1962.
- - - General Standards of Construction and Equipment -- General Hospitals. PHS Publication No. 930-A-2; 1962.
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